

Notice of Allowability

Application No.

10/697,361

Examiner

Colin M. LaRose

Applicant(s)

WANG ET AL.

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 10/26/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____.
7. ☒ Examiner's Amendment/Comment.
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

Comment on the Drawings

1. Figures 1A and 1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, U.S. Patent 4,853,970 by Ott et al. ("Ott") discloses a method of detecting the location and luminance transition range of a slant image edge (i.e. edges in arbitrary directions) in a digital image comprising pixels, the method comprising the steps of:

(a) defining a two-dimensional window of pixels in the digital image (figure 2; column 7/1-19);

(b) determining a variance value for a plurality of pixels around a selected pixel inside said window (equation 1, column 8);

(c) based on the variance value, determining if the selected pixel is in an edge region (column 8/15-32);

(e) if the selected pixel is essentially a center pixel in a luminance transition range of the slant edge, then determining the length of the luminance transition range of the slant image edge (see e.g. figure 3: given a pixel 18 near the center of an edge transition region in any direction, the length of the intensity (analog to luminance) transition range is shown as the distance from the "dark region" to the "light region").

However, Ott does not appear to disclose or suggest: (d) if the selected pixel is in an edge region, then *determining if the selected pixel is essentially a center pixel in a luminance transition range of a slant edge*. That is, Ott does not determine if a pixel of interest is located at essentially the center of a luminance transition range. [Here, the "center" is construed to denote the center, or middle point, of a luminance transition range and not, e.g., the center of the aforementioned 2-D window of pixels.]

Ott compares a pixel of interest to the mean value of pixels within the image to determine whether the pixel is to the left or right of an inflection point, as shown in figure 3 (see column 9), however, such a determination does not indicate which pixel lies at (essentially) the center of the transition region.

Similar limitations appear in claim 11, which recites a system that substantially corresponds to the method of claim 1, and is allowed therefor.

Similar limitations appear in claim 17, which recites a system that is substantially the same as that of claim 11, and includes a "binary pattern generator" that generates a binary pattern of the window pixels based on their mean value—this limitation is disclosed by Ott in column 9. Accordingly, claim 17 is allowed for substantially the same reason as claims 1 and 11.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Related Prior Art

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is listed on the attached "Notice of Reference Cited."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated

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information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000. Any inquiry of a general nature or relating to the status of this application or proceeding can also be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

A handwritten signature in black ink, appearing to read 'Colin M. LaRose', with a stylized, flowing script.

Colin M. LaRose
Group Art Unit 2624
1 April 2007